

Art Unit: 2829

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SD

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1. (Currently Amended) A stress-free lead frame[[(1)]] comprising;
a plurality of integrated circuit areas[[(11)]], each of said plurality of integrated circuit areas having a die pad[[(12)]] and a plurality of leads; and
a peripheral pad[[(14)]] surrounding said plurality of integrated circuit areas, the peripheral pad comprising first and second parallel opposing support bars and third and fourth parallel opposing support bars arranged orthogonal to the first and second opposing support bars;
said peripheral pad[[(14)]] being provided with a plurality of stress-relief ~~means~~ openings along each of the first, second, third and fourth support bars[[(15)]]].

2. (Currently Amended) A stress-free lead frame [[[1) comprising]]] as claimed in Claim 1 wherein the peripheral pad further comprises:[[
a plurality of integrated circuit areas (11), each of said plurality of integrated circuit areas having a die pad (12) and a plurality of leads (13); and
a peripheral pad (14) surrounding said plurality of integrated circuit areas, said peripheral pad (14) being provided with]] a plurality of interlocking means[[(16)]] along the first, second, third and fourth support bars.

3. (Currently Amended) A stress-free lead frame[[(1)]] as claimed in Claim 1 wherein said plurality of stress-relief openings ~~means~~[[(15)]] comprises holes and slots, each hole being a non-elongated opening and each slot being an elongated opening.

4. (Currently Amended) A stress-free lead frame[[(1)]] as claimed in Claim 3 wherein said holes and slots are arranged in multiple rows.

5. (Currently Amended) A stress-free lead frame[[(1)]] as claimed in Claim 2 wherein each of said interlocking means[[(16)]] comprises a plurality of slots, each slot being an elongated opening.

6. (Currently Amended) A stress-free lead frame[[(1)]] as claimed in Claim 4 wherein said holes and slots are arranged side by side at equal intervals.

7. (Currently Amended) A stress-free lead frame[[(1)]] as claimed in Claim 5 wherein said holes and slots are arranged side by side at equal intervals.

8. (New) The stress-free lead frame as claimed in claim 1 wherein the peripheral pad further comprises a plurality of positioning holes on the first and second support bars.

Claim 9 through 31 are cancelled

32. (New) A method of manufacturing a plurality of integrated circuit packages, the method comprising:

providing a lead frame strip comprising (i) an outer frame having a plurality of stress relief openings around a circumference of an inner portion of the outer frame and a plurality of positioning holes along an outer portion of the outer frame, and (ii) a plurality of horizontal and vertical connecting bars attached to the outer frame and arranged in a manner that defines a plurality of inner frames arranged in a matrix pattern within the outer frame, each inner frame comprising a die pad and a plurality of leads arranged around the die pad;

placing an integrated circuit die on each die pad, and for each integrated circuit die, electrically connecting the integrated circuit die to the plurality of leads surrounding its respective die pad;

applying encapsulant material over the lead frame strip so that the plurality of inner frames including each integrated circuit placed on each die pad within the plurality of inner frames and the plurality of stress relief openings are covered by the encapsulant material;

severing individual integrated circuit packages from the lead frame strip to create the plurality of integrated circuit packages.

33. (New) The method of claim 32 wherein the step of applying encapsulant material comprises heating pellets of encapsulant material placed in a mold to liquefy the material.

34. (New) The method of claim 33 wherein the plurality of stress relief openings comprise a plurality of rows of openings.

35. (New) The method of claim 34 wherein the plurality of rows of openings include a plurality of rows of elongated openings and at least one row of non-elongated holes.

36. (New) The method of claim 34 wherein the plurality of rows of elongated openings comprises a first row and a second row and wherein the first row has a plurality of elongated openings that are offset from the plurality of elongated openings in the second row.

37. (New) The method of claim 35 wherein the plurality of rows of elongated openings further comprises a third row and wherein the third row comprises a plurality of elongated openings that are substantially the same size and shape as a corresponding plurality of elongated openings in the first row.